

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

CLEANUP AND ABATEMENT ORDER NO. 98-003

REQUIRING ULTRAMAR, INC.
TO CLEANUP AND ABATE
CONDITIONS OF SOIL AND GROUND WATER POLLUTION
AT ULTRAMAR REFINERY, WILMINGTON

(File No. 93-36)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. The Ultramar refinery is owned by Ultramar, Inc. (Ultramar). Prior to December 1988, the refinery was owned and operated by Union Pacific Resources Company (UPRC, then known as Champlin Petroleum Company). The refinery is located at 2402 East Anaheim Street, Wilmington, California. The refinery is bounded by Anaheim Street and light industrial/commercial businesses to the north and the Dominguez Channel to the west. The southern and eastern boundaries of the refinery adjoin crude oil production properties formerly owned and operated by the UPRC (now owned by the Port of Long Beach, POLB). The Terminal Island Freeway bisects the northern and southern portions of the refinery. The existing refinery has tanks and piping, on both side of the freeway. Refinery process units are located only on the north side of the freeway.

The refinery is located in the Wilmington Oil Field. The refinery and surrounding properties have been the site of extensive oil exploration and production since the 1930's. Many active oil wells are located at the surrounding properties. Oil field sumps and disposal pits were located throughout the site and adjoining properties.

On April 22, 1985, this Regional Board issued Order No. 85-25 to Champlin Petroleum Company to conduct a subsurface investigation of its facility to assess soil and groundwater pollution. Subsequent soil and groundwater assessments were conducted at the site.

2. The refinery processes about 120,000 barrels per day of crude oil and secondary feed stocks. A complete line of petroleum products is manufactured at the refinery including gasoline, jet and diesel fuels, low-sulfur distillates, and petroleum coke. Principal processing units include crude and vacuum distillation, delayed coking, catalytic reforming, hydrotreating, fluid catalytic cracking, alkylolation, and sulfur recovery. All these units are located in the refinery area north of the Terminal Island Freeway.
3. Ultramar, Inc. has upgraded its Wilmington refinery in order to meet state and federal requirements for production of reformulated fuels. The key modifications include a new gas oil hydrotreater, a hydrogen plant, a cogeneration plant, an air separation unit, and a carbon dioxide recovery system and truck loading rack. An Environmental Impact Report (EIR) was approved by the South Coast Air Quality Management District on August 6,

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1993 and September 1, 1994 (subsequent EIR). As part of the refinery upgrade, Ultramar acquired an adjacent property which is contiguous with the refinery (Gas Oil Hydrotreater, GOH, site) and an offsite property which is separated from the refinery by the Dominguez Channel (Hydrogen site). Environmental monitoring and sampling was performed during the three construction steps of the Clean Fuels Project, from April 1993 through December 1995, at the refinery and at off-site facilities recently acquired by Ultramar from the Port of Los Angeles (POLA) and POLB. Step I and II of the Clean Fuels Project construction was completed in late 1995.

4. On August 9, 1988, the California State Department of Health Services, now the Department of Toxic Substances Control (DTSC), and UPRC entered into Consent Order #HSA 88/89-009. The Consent Order addresses waste disposal sumps operated by the TCL Corporation (TCL) between 1951 and 1970. The portion of the refinery (34-acre) south of the Terminal Island Freeway is within the TCL Consent Order area. The 34-acre property was sold in late 1988 by UPRC to Ultramar (TCL/Ultramar).
5. On July 1, 1996, DTSC officially transferred lead agency status to this Regional Board for remediation of the 34-acre TCL/Ultramar site. DTSC update of the CALSITES database reflects that the 34-acre TCL/Ultramar site has been referred and this transfer will not require public notification. DTSC approved the "Supplemental Remedial Investigation Report for TCL/Ultramar Site, Wilmington, California" dated December 14, 1995. The "Draft Report of Feasibility Study, TCL/Ultramar Site, Wilmington, California" dated June 19, 1996, submitted to DTSC has not been reviewed. UPRC's obligation under the existing consent agreement for this TCL/Ultramar site will be satisfied if appropriately remediated by Ultramar under this Regional Board's oversight.
6. The TCL/Ultramar site consists of seven aboveground storage tanks, office, safety, and warehouse buildings and trailers. The on-site concrete lined storm water ditch is used for collection of surface runoff and then conveyed to a treatment station located adjacent to the Cerritos Channel. Numerous aboveground and underground pipelines exist at the site. There were, or historically, four UPRC oil field sumps on the TCL/Ultramar site. In addition, one sump was operated by Cronese Products Inc. and the Marcada Corporation between 1948 and 1951.
7. Site specific soil cleanup levels proposed by Ultramar at the refinery were approved on November 10, 1993, and subsequent revisions were made in letters dated July 7, 1994, and August 15, 1996. A general Waste Discharge Requirements (WDRs), Order No. 91-93, was issued on December 21, 1993, by the Regional Board's Technical Unit to allow discharge of non-hazardous contaminated soils and other wastes at the refinery.

Site investigation and remediation have been conducted at the GOH site, Hydrogen Plant site and TCL/Ultramar site.

Prior to Ultramar's acquisition of the GOH site from POLB, Ultramar performed an investigation at the GOH site. No chlorinated hydrocarbons, PCBs, or PAHs were detected in the samples collected. All soil found to contain lead and hydrocarbons at concentrations greater than site specific soil cleanup levels were remediated by excavation. Water samples from three temporary groundwater monitoring wells indicated no detectable

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concentrations of total petroleum hydrocarbon as gasoline (TPHg) and diesel (TPHd) or volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene and xylene (BTEX).

Prior to Ultramar's acquisition of the Hydrogen site, a subsurface investigation was conducted at the site. Low concentrations of several chlorinated compounds were also detected in soil samples, however, no PCBs or semi-VOCs were detected in the samples collected. A remediation effort was undertaken to remove the hydrocarbon and metal concentrations that exceeded the site specific soil cleanup levels. During the investigation and remediation, all visible liquid-phase hydrocarbon (LPH) encountered was removed. Water samples from ten temporary groundwater monitoring wells indicated no liquid-phase hydrocarbon was detected. Only one out of ten wells detected TPH and benzene.

Investigations at the TCL/Ultramar site indicated that soil beneath portions of the site have been impacted primarily by TPH as crude oil and metals. Polynuclear aromatic hydrocarbons (PAHs), PCBs and chromium have also been detected at the site. The extent of the soil contamination is not fully defined. Groundwater samples has not been impacted by significant concentrations of TPH and metals. No lead has been detected in two of the three groundwater monitoring wells (MW-9 and MW-26), and lead has only been detected during one sampling event from monitoring well MW-5 since lead testing began in February 1994.

8. During groundwater assessment previously performed at the site, wells containing LPH include MW-2, MW-3, MW-7, MW-15, MW-17, MW-19, MW-20 and MW-25. LPH was also encountered in the vicinity of the diversion box structure (wells MW-10 and MW-12, no longer exist), the east side of former parking lot (abandoned production pipeline area) of the Clean Fuels Project (CFP). An investigation focusing on the source of LPH encountered in MW-25 found that the most probable source was from historical oil field disposal operations. The extent of the LPH and dissolved-phase hydrocarbons plumes has not been fully defined. The TDS and salinity levels are detected up to 19,000 mg/l and 10,000 mg/l, respectively.
9. Based on a human health risk assessed only at the TCL/Ultramar site, multi-pathway, multi-chemical cancer risks range from 6.63×10^{-7} for the off-site resident to 5.74×10^{-5} for the on-site resident. Cancer risks are driven by dermal contact from PCBs and PAHs. All non-cancerogenic Hazardous Index values are less than 1 for all populations evaluated, except for the on-site resident child. Multi-chemical, multipathway values ranged from 0.01 for the off-site resident adult to 1.61 for the on-site resident child. Values greater than 1 are attributable primarily to arsenic and PCBs. No ground water chemicals were selected for inclusion in the risk assessment. The results of the ecological risk assessment indicated that the chemicals present at the TCL/Ultramar site are unlikely to impact biological receptors, their natural communities, or habitats.

10. Geologically the site lies in the Dominguez Gap, a stream-cut channel eroded and backfilled by ancestral rivers deposits. Near-subsurface sediments beneath this area consist of alluvial sand, silt, and clay of Recent age. The sediments obtain a thickness of approximately 150 feet beneath the site. Groundwater in the Recent sediments is found in semi-perched aquifers and in the Gaspur aquifer. The Bellflower aquiclude separates the semi-perched aquifers from the Gaspur aquifer. In the site vicinity, the Bellflower aquiclude is approximately 80 feet thick. Lying beneath the Bellflower aquiclude, is the Gaspur aquifer - the shallowest regional aquifer in the site vicinity. The Gaspur aquifer extends from a depth of 90 feet below sea level (bsl) to 140 feet bsl beneath the site. The Recent alluvium is underlain by sand, silt and clay of the Lakewood Formation, which is approximately 50 feet thick beneath the site. The principal aquifer of the Lakewood Formation is the Gage aquifer. The Gage aquifer extends from approximately 150 feet bsl to 200 feet bsl beneath the site. The Lakewood Formation is underlain by sand with gravel, silt, and clay of the Lower Pleistocene aquifers in the San Pedro Formation. The San Pedro Formation contains the Lynwood and Silverado aquifers. The Lynwood aquifer extends from a depth of approximately 200 feet bsl to 300 feet bsl beneath the site. The Silverado aquifer extends from a depth of approximately 600 feet bsl to 900 feet bsl.

The first groundwater encountered beneath the site varies between 3 to 11 feet below ground surface, corresponding to an elevation of between +3 and -4 feet relative to mean sea level. The site slope and ground water flow is generally to the south. The groundwater is found in hydraulic fill material and within an unnamed semi-perched aquifer.

11. The Board adopted a Revised Water Quality Control Plan for Los Angeles River Basin on June 13, 1994. The Plan contains water quality objectives for ground water in West Coast Basin, Coastal Plain Subunit.
112. Groundwater in the West Coastal Plain is beneficially used for municipal and domestic supply, agricultural supply, and industrial service and process supply. The nearest operating domestic supply well is located approximately three miles northwest of the site.
13. This project involves an action taken for the protection of the environment and as such is exempt from the provisions of the California Environmental Quality Act in accordance with California Code of Regulations, Title 14, Chapter 3, Section 15321.

IT IS HEREBY ORDERED, pursuant to Water Code Section 13304, that Ultramar shall comply with the following:

1. Cleanup and abate the on-site and off-site soil and groundwater contamination originating from its refinery operations in accordance with the time schedule detailed in Attachment A.
2. Prepare a source identification and elimination program, and based on an evaluation, develop a revised source identification and elimination program. An evaluation report is due to this Regional Board according to the schedule in Attachment A.

3. In order to prevent the residual hydrocarbons remaining in the soil from becoming continuous sources of contamination to the underlying ground water, Ultramar shall evaluate the adequacy of its previous subsurface investigation including newly acquired areas. Based on this evaluation, prepare a revised subsurface investigation workplan in order to complete any necessary site assessment to fully define the nature and extent of residual hydrocarbon. The site assessment shall include delineation of the lateral and vertical extent of subsurface petroleum contaminations in both the vadose zone and saturated zone including liquid phase hydrocarbons. An evaluation report and subsurface investigation workplan, shall be submitted to this Board for the Executive Officer's approval according to the schedule in Attachment A.
4. Ultramar shall develop and submit for approval, a remedial action plan (RAP) for the liquid phase hydrocarbons beneath the refinery and hydrogen plant sites. The RAP shall be submitted for the Executive Officer's approval according to the schedule in Attachment A.
5. After full definition of the liquid phase and dissolved hydrocarbon plumes have been completed, an evaluation whether further cleanup, abatement or containment at the site will be conducted.
6. Ultramar shall submit a final report describing all the results of the activities undertaken pursuant to this Order.
7. Quarterly progress reports detailing all activities implemented and results obtained during the previous three-month period, as required by this Cleanup and Abatement Order, shall be submitted to this Board. The quarterly reports shall be submitted January 15, April 15, July 15, and October 15 each year.
8. Ultramar shall develop and submit for approval a plan for periodic groundwater monitoring. The plan will include the groundwater sampling from the existing wells and submittal of a groundwater monitoring report.
9. If petroleum contamination is found to be present in the deeper aquifers from operations at this site, a proposal and time schedule to remediate any such petroleum contamination in the deeper aquifer shall be prepared for the Executive Officer's approval. The proposal shall be submitted to this Board within sixty days after the petroleum contamination of the deeper aquifer is confirmed.
10. The investigation and cleanup program shall be directed and conducted by a registered civil engineer or geologist or a certified engineering geologist.
11. This Order is not intended to stop or redirect any investigation or cleanup or remediation programs ordered by this Board or any other agency.

12. The Executive Officer is authorized to take appropriate action as provided for in Sections 13268 and 13350 of the Water Code against Ultramar, Inc. for any noncompliance with this Order including assessment of penalties in the amount of up to \$5000.00 per day for each day on which any technical data requested by this Cleanup and Abatement Order is not submitted.
13. This Order in no way limits the authority of the Board as contained in the California Water Code, to require additional investigation and cleanup pertinent to this project. This Order may be revised by the Executive Officer as additional information on this project becomes available. Upon request by Ultramar, Inc., and for good cause shown, the Executive Officer may delete or extend the date of compliance for any action required of Ultramar, Inc. under this Order.
14. Unless otherwise approved by the Executive Officer, failure to comply with the terms or conditions of this Order may result in imposition of civil liabilities either administratively by the Regional Board or judicially by the Superior Court in accordance with Section 13350, et. seq. of the California Water Code, and/or referral to the Attorney General of the State of California for such legal action as he or she may deem appropriate.
15. Section 13304 of the Porter-Cologne water Quality Act allows the Regional Board to recover reasonable expenses from responsible parties to oversee cleanup and abatement of unregulated discharges which have adversely affected waters of the State.

Hereby ordered on January 21, 1998.

DENNIS A. DICKERSON
Executive Officer

ATTACHMENT A
CLEANUP AND INVESTIGATION ACTIVITY SCHEDULE

Activities	Completion Date
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SOURCE IDENTIFICATION AND ELIMINATION . submittal of evaluation report	April 30, 1998
REFINERY AND HYDROGEN PLANT SITE ASSESSMENT . submittal of evaluation report with a subsurface investigation workplan	August 15, 1998
BEGIN FINALIZATION OF REFINERY & HYDROGEN SITE ASSESSMENT	April 30, 1999
SUBMITTAL OF SITE REMEDIATION PLAN . based upon the results of the site assessment	August 15, 1999
IMPLEMENT REMEDIAL ACTION PLAN	30 days after plan is approved by Executive Officer
EVALUATE WHETHER FURTHER CLEANUP OR ABATEMENT IS REQUIRED BASED ON EXISTING REGULATORY GUIDELINES AND SUBMIT FOR APPROVAL	To be determined
